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ON

Apparatus & Appliances for Elementary Schools

BY

Mrs. E. D. ALLAN.

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SCHOOL APPARATUS & APPLIANCES.

Humph! What a dry-as-dust subject, I hear many say. Yes, dry-as-dust, while we regard it as so many black-boards, maps, pictures, models, etc., which that teasing Education Department insist upon being provided in our schools. But seriously regarded it makes almost a cult, and while apparatus is generally understood to be only an accessory to teaching it is yet only second to it. Indeed so important was it considered at one time, that it seemed to take even *first* place in some quarters, as witness the "recognition" of a school being often contingent on certain apparatus being provided. But as some one has wisely remarked, all knowledge requires three stages—one to go forward, a second to go backward, and a third to right itself. And we may now claim to have reached the third and happy stage, for in the latest Educational Rules, that regarding apparatus reads simply and briefly—"The provision of much apparatus need not be insisted upon, but there should be a supply of suitable pictures and other simple appliances."

But simple and even indulgent as the rule reads, its very indefiniteness makes it rather difficult to work out. Too little, or what is nearly as bad, too much apparatus may together find shelter under its interpretation. A right appreciation however of the true aim and purpose of apparatus will help to a right interpretation of the rule.

Apparatus, the Dictionary tells us is "somethi *prepared*, a set of tools and appliances." And in t

two words "prepared" and "tools" lie the *mind and matter of* apparatus. It is no mere machinery but of the very nature and essence of education, since that preparation which lies at the root of all conscientious teaching is inseparably joined to it Here then is the reason for the Education Department's almost arbitrary insistence on certain apparatus being furnished in our schools. How much depends upon this conscientious provision and preparation of our teaching tools only those know who practise it. Indeed it is not too much to say that no lesson is complete without it. There is just the difference between a lesson with apparatus and a lesson without it as there is—let us say—between the all-alive moving pictures of the Cinemetograph and the still lifeless views of an old fashioned magic-lantern—"The teacher is sure to show us something interesting to-day, and I must not miss going to school," the boy will say when tempted to stay away. Here then is a cure for the indifference and poor attendance so constantly complained of in our Elementary schools. Yet more will the boys' interest and regular attendance be helped, if his services are invited in the preparation of the morrow's apparatus. He may be asked to contribute a live-hen, or an egg, or even some feathers in a lesson on the fowl—a more talented pupil may be asked to make a model of clay or wood bearing on a certain lesson. This is a very practical form of home-work for the children.

Yet we must be careful not to overdo or force apparatus. The story—a true one—is told of a teacher who was giving a lesson on some Geographical defini- ns before an educational officer. The master had fully provided a large slate, a lump of mud and

some water to illustrate an island ; but just outside the school-house, easily seen through a window, was a river displaying a natural island. The lesson over, the Educational officer asked a child, fully anticipating the answer given "How big is a real island?"—"இவ்வளவு," "so big," came the ready answer, indicating a piece of his thumb just the size of the island on the slate. No doubt the teacher's appliances were in strict training-school style, but such a grotesque and forced use of apparatus is to consider the instrument before the end. Apparatus therefore should as far as possible be natural, not forced, or so fussy or obstrusive as to defeat its own purpose. We should make use of all appliances and illustrations *at hand*—not necessarily *in* hand—remembering that in teaching as well as in Theology, the things that are not understood are understood by the things that are seen, and it is only where nature's aid fails art should step in. Some of us are familiar with Long Fellow's lines :—

> "And Nature the old old nurse
> Took the child upon her knee,
> Saying here is a story book
> Thy Father hath written for thee"—

There is much in them for the teacher in search of suitable apparatus and apt illustration, and it is a good sign that Nature-study is coming more to the fore in our schools.

But now to the real business of furnishing a school with necessary apparatus. Here the black board must take first place as the instrument *par excellence* in the hands of a teacher. Given a teacher with a fair idea of drawing, the black board may be made to do

duty for maps, pictures, diagrams, ball-frame etc. Therefore blackboards should be many and ample. Better than the old blackboards are " Black walls". They are squares of blackened cement let into the walls. They are saving of space, of wear and tear and dust and carriage. They should be let into every available space of wall. A class may well be surrounded by four such walls. Here on one is a statement of a sum just taught the children—on a second are exercises on the same problem to be worked out by the class—on a third is the skeleton of a map drawn by the teacher or a pupil in anticipation of the day's lesson—on the fourth remains the black-board abstract of a lesson given the day before. By this plan there is not that constant rubbing off and changing what is written, and the matter by being allowed to remain a whole morning or even a day on the walls is likely to be better impressed on the minds of the pupils. Those who have used these walls know the delightful comfort of them—no cramming of information into a limited space, no knocking up against the black board and nearly toppling it over by a nervous and awkward teacher. Space is conserved, air and ventilation unobstructed and a neater appearance is given to the class as a whole.

Care must be taken that these blackwalls are so placed that the light falls on to the backs of the children and right on the walls. Some of them should be low enough to be used by the Infant class, and in this case utility may be made beautiful by a *dado* of dark (not necessarily black) wall being provided in the room occupied by the infants, where they can indulge their love of drawing without let or hindrance *This* is Free-arm drawing, if you like, and one can imagine a child's keen delight in

it. A very liberal supply of coloured chalk should go with these walls, and the children, big and little, encouraged to use them in and out of school hours. How much undreamed of talent may thus be brought to light!

Next to black-boards come good maps and pictures. I say *good,* because the Indian market is only too apt to provide us with caricatures of the real object—a riot of colour with very little truth to the original. Bell's pictures are good. They will cost more but better do without minor items of apparatus and have them good and in plenty. A very good plan is to cut out of magazines and children's books good pictures of animals and objects and to paste these neatly on big pieces of card board, 3 feet by 4 feet, for hanging on the walls. Such a collection is often better than the stereotyped pictures sold for school use, to say nothing of its economy.

Besides the map of the District every school, even that of only the first two standards should have a map of the World. Most elementary schools cannot afford *many* maps, but in a map of the world we have all maps in one, and any and every geographical name that chances in a lesson can be referred to it. Then too, it is simpler to beginners to see the world as a whole than in bits, as represented in single maps of continents and countries.

All maps and pictures should be hung up on the walls during school hours, and not stored away in closet or chest to be brought out only for a special lesson. What of the wear and tear? This is more than balanced by the gain to the children. "A room hung

with pictures is a room hung with thoughts," said one of our greatest painters and the chief worth of a picture lies in the idea or thought it is intended to convey to the eye. Our foolishness, therefore, in putting away maps and pictures under the mistaken notion of saving them, is on a par with that of the man who being surprised by a heavy shower of rain bought himself an umbrella in a shop near by—but it was such a good one that on coming out again, to preserve it from the rain he put it under his water proof! How many an English boy can trace his easy knowledge of Geography to the maps hanging in a beloved father's study, or in the large entrance hall of the dear old home! Maps and pictures become impressed on children's minds and as the latter expand, they will refer to them, learn from them, and thus considerably ease the work of teaching. A young child has sometimes surprised me with a piece of information—"How do you know?" I questioned. "I noticed the picture on the wall" was the reply.

Good models come next, and among them the globe comes first. What a world of interesting knowledge may be opened up by its intelligent use! Small wonder then that the Educational Authorities made so much of it under the old rules (and I am not so sure that they do not under the new) as on one occasion to call forth the official dictum—"no globe, no backs to the benches—recognition withheld till provided." Nor is it enough that the globe be furnished. It should be in constant use, even in classes where geography is not taught as a distinct subject. The children ought to handle and examine it for themselves more than they do, and apply to it and the map whenever any geographical reference chances in a lesson.

Then with regard to other models, in these days when clay-modelling and drawing are so much the ...e, good models are almost indispensable. Models ...anything, and everything, a sort of *omnium gatherum*, will be as useful as another "Enquire within upon everything." Is it a lesson on the mango—when mangoes are out of season—here is a fine model of a mango carved in wood or modelled in mud and realistically painted. Is it a lesson on the Indian method of ploughing—in a town school where the real thing cannot be easily seen—here in our collection are models of plough and oxen carved by the boys with a turn for carpentry. Or it may be a lesson on the boat, here then is a whole collection of boats from the primitive catamaran to the finely finished specimen used in a university boat race. And so on. Indian children are clever at modelling and there should be little difficulty in getting together such a collection of models.

Following naturally upon this would be a school museum, and where space allows a school garden. Their educational value is too well known to be enlarged upon here. It is enough to say that both ought to be almost entirely the work of the pupils big and little. It is too often left to the master, the pupils just helping. But where it is made the business of the pupils, all being pressed into it, there will be scope for that unity and *esprit de corps*, so lamentably absent in our lower Indian schools. The classes in a school are separated by distinct studies teachers and other interests, but here is common ground for all, something in which every child may bear a hand with one end in view.

A school museum suggests its twin—a school library. But this is not usually required in an elementary

school of four standards. In most of our village schools it is hardly practicable, that is, in its outer fabric o a book-case with its neat rows of numbered books its registers of entry and issue, etc. Yet much m be done by the teachers to encourage reading and t free circulation of good books, if only a few, among the scholars. "Reading maketh a man," and to neglect it is to neglect one of the most potent factors in the education of a child. Vernacular translations of sound old English books and much of vernacular literature itself are being placed in the market at cheap prices; and the pleasures of Shakespeare, the fascinations of Robinson Crusoe, the mirth and pathos and moral of Hindu folk-lore, the inspiration of good biography and much else that is good, are now within the easy reach of even our village children. Here is a grand opportunity if we would make conscientious educationalists. What here applies to the pupil applies still more forcibly to the teacher. Every teacher in our Vernacular schools should strive to have a library of his own, and to cultivate the habit of reading generally and widely. He may not be able to afford to purchase many books, but he might borrow them and in turn lend the few he possesses. His books must be a teacher's best tools for teaching himself. If the pupils need *their* apparatus, a teacher certainly needs *his* in his books.

Time fails me to talk of the many admirable but lesser items of apparatus. Besides, the main intention of this paper is to deal with the most practical and common-sense use of ordinary apparatus by ordinary teachers in ordinary schools. But given these—and they are the least we can do with,—many and ample black boards (black walls), good pictures and maps and

models, a museum and garden, and where practicable, a library—all other needs, or notions if you like, must be decided according to the standard of the school, its locality, *i. e.*, town or village, the class of pupils taught, and the funds available. But an intelligent resourceful teacher will make his apparatus as occasion calls for it, without having his school stocked with all the latest and most expensive apparatus. For example instead of the tellurean, an appliance beyond the reach of most schools, the rotation of the Earth on its own axis and around the sun, and that of the moon round the earth, and the causes of night and day and the eclipses may be taught in a sort of game. A boy in the middle of a chalked circle holds a bright light to represent the sun —a second boy representing the earth turns round and round on the chalked circle—a third boy goes round the earth-boy to, represent the moon. How simple! Not an anna spent, no troublesome machine to keep in order and yet the same if not better results. Again for ball-frame, an ingenious teacher might provide strings of tamarind and other Indian seeds—the children themselves collecting and stringing them with so many of each sort alternating. Instead of the single ball-frame for the class, each child could easily have a string. This and the tellurean game savour of kindergarten but there is a wealth of ideas for apparatus in kindergarten alone, and as a *method* of teaching it ought to be practised in the higher as well as the lower classes. There are also many ideas for simple, inexpensive apparatus to be had from the exhibits round us.

Having furnished our school with what we consider necessary apparatus, it is now our duty to see that that apparatus is well looked after—not by being put away in closet or chest, but while constantly in use during

school hours, it should be carefully handled, repaired as soon as necessary, renewed when too old, and added to as funds permit. A teacher should value his apparatus as a workman values his tools, and he should take the same pride in it as he does in good inspection results and big grants. Dirty blackboards, rag-rags of pictures and maps, broken ball frame, decrepit benches, time piece lying on its side or back to induce it to go, a bell minus its handle, or worse still its tongue—who is not familiar with this picture in our school life? Such a condition of things may be relied on as an index to the general state of the school, and the responsible teacher should be more severely dealt with than he is. It is this want of care of the apparatus that makes managers chary of providing the necessary appliances or of renewing them when old. And—teachers take notice!—in distributing apparatus to a set of schools a manager may be relied on to send the best and largest share to the school where apparatus is well looked after.

And now as a last word, let us turn again to the moral obligation underlying the meaning of the word apparatus. Latin *ad.* to, and *paratus* prepared. How many of us "in the trivial round, the common task" of every day teaching, practise this preparation? How many of us have settled to-day what the apparatus for tomorrow's lessons shall be? How many of us have seen that that apparatus is usable and in good repair? But this "doing the thing as one sees it, for the God of things as they are" (to quote Kipling) is so sadly lacking in our ordinary school life, and until we attain unto this conscience in our work, we shall make small progress. But all through our educational system a decided quickening is going on, a better conscience is at work, and we are daily approximating to the ideal,

getting " nearer and nearer every year, to the visions and hopes we hold so dear ". This exhibition is but the outward expression of this quickening and better mind. Let us look around carefully, intelligently, studiously, and cull all there is for us to learn and use. "Mother" said a little boy, " Is the sermon ended now ?" " No dear " was the answer, " we are going home to practise it ? " The mother's answer supplies us with the moral of this exhibition. Some of us will be returning to the dull up-hill work of a distant village school, some to the etrenuous competitive life of a town school, others to the prickly positions of managers and Educational officers, but where ever our work may lie, let us keep sturdily before us this practice of things, and doing so we shall one of these days surprise ourselves at our goal when Indian education will proudly take its place with the best in the world.

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